

REMARKS

This is in response to the Final Office Action dated June 13, 2008 and in response to a telephonic interview with the Examiner on August 1, 2008. In the Office Action, all pending claims 1-18, 23-41, 46-64, 69-77 and 82-111 were rejected. With this Amendment, claims 1, 23, 46 and 69 are amended and the remaining claims are unchanged in the application. Applicant respectfully requests reconsideration and allowance of all pending claims.

I. SUMMARY OF INTERVIEW WITH THE EXAMINER

A telephone interview was held with the Examiner on August 1, 2008. During the interview, which included the Examiner and the undersigned, the rejection of independent claim 1 under 35 U.S.C. §102(b) based on Dias et al. (U.S. Patent No. 5,694,024) was discussed. Although the Examiner appeared to agree that there were differences between the invention of claim 1 and Dias, the Examiner suggested adding language to claim 1 and the other independent claims to provide additional context and clarification for the claim limitations. No agreement was reached regarding any specific claim amendments.

II. CLAIM OBJECTIONS AND REJECTIONS

In section 1 of the Office Action, the Examiner noted that the limitation “without any intervening electrical measurement components between the DC-DC converter circuit and the storage battery” is not supported by the Specification. Although the Applicant believes that there is adequate support for this limitation in the Specification, this limitation has been removed and other clarifying language has been added to claim 1.

In section 3 of the Office Action, claim 1 was rejected under 35 U.S.C. §102(b) as being as being anticipated by Dias et al., U.S. Patent No. 5,694,024.

Claim 1 includes the following:

- The charge supply battery has a nominal voltage lower than that of the storage battery.
- The DC-DC converter circuit is configured to provide a charging voltage at the output having a magnitude greater than a magnitude of the supply voltage, and
- The charge supply battery provides a charge to the storage battery via the DC-DC

converter circuit to increase a life of the storage battery by preventing self discharge of the storage battery.

The Office Action indicates that item 25V shown in FIG. 2 of Dias is a charge supply battery of the type required by claim 1. Item 25V in FIG. 2 of Dias, which is a 25 volt power supply, is a higher voltage than the 20 volt charging output that battery charger 200 of Dias can provide. (See column 2, lines 45-46, of Dias.) This is contrary to the above elements of claim 1 that “provide a charging voltage at the output having a magnitude greater than a magnitude of the supply voltage” and thereby, by using “a charge supply battery that has a nominal voltage lower than that of the storage battery,” “increase a life of the storage battery by preventing self discharge of the storage battery.”

Column 3, lines 12-15, of Dias, which briefly describe the 25 volt power supply, are as follows:

Controller 210 has an internal voltage regulator, so a 25 volt power supply may be used as illustrated to provide charging of multicell battery packs.

The above language shows that item 25V in FIG. 2 is not a battery. Thus, Dias does not show “a charge supply battery” or a charge supply battery being of “a different type and construction than the storage battery,” as required by claim 1.

For the above reasons, Dias does not show all the elements of claim 1. Thus, Dias does not anticipate claim 1.

In section 4 of the Office Action, claims 2-18 and 82-94 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dias, in combination with a paper published by Electronix Express (a non patent publication, November 10, 1998).

In addition to not showing all the above-noted claim elements, Dias does not expressly or impliedly suggest all the elements of the claimed invention. The Electronix Express published paper, which only describes, in general, the design and operation of DC-DC converters, does not overcome the deficiencies of Dias. Thus, claims 2-18 and 82-94 are non-obvious and allowable over the combination of Dias and the Electronix Express published paper.

In section 5 of the Office Action, claims 23-41 and 95-100 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tomantschger, U.S. Patent No. 5,637,978 in combination with a paper published by Electronix Express (a non patent publication, November 10, 1998) and Bertness, U.S. Patent No. 6,249,124.

Tomantschger discloses a booster battery assembly having a booster battery that is not protected from self-discharge by a charge supply battery and a DC-DC converter. The Electronix Express published paper only describes, in general, the design and operation of DC-DC converters, and Bertness relates to an electronic battery tester with an internal battery. None of these references taken alone or in combination teach or suggest a DC-DC converter circuit having an input electrically coupled to a charge supply battery and an output electrically coupled to a storage battery (or booster battery), which is of a different type and construction than the charge supply battery. Further, the Examiner has not presented a convincing line of reasoning as to why an artisan would have found the claimed invention to have been obvious in light of the teachings of the references. Thus, claims 23-41 and 95-100 are non-obvious and allowable over the cited art.

In section 6 of the Office Action, method claims 46-64, 69-77 and 101-111 were rejected for the same reasons in the earlier sections in connection with the apparatus claims.

For reasons provided above, Applicant believes that method claims 46-64, 69-77 and 101-111 are non-obvious and allowable over the cited art. Further, although some method claims differ substantially from the apparatus claims, the Office Action has not addressed these differences in the rejection. For example, independent method claims 46 includes “providing a charging voltage to the storage battery as a function of the supply voltage, with the charging voltage having a magnitude greater than a magnitude of supply voltage.” Although a similar element does not appear in the independent apparatus claims, the Office Action does not address this element. In any event, Dias teaches or suggests nothing about this element. The remaining references do not compensate for the deficiencies of Dias.

In view of the foregoing, Applicant respectfully requests reconsideration and allowance of all pending claims 1-18, 23-41, 46-64, 69-77 and 82-111. Favorable action upon all claims is solicited.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,
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